# Lesson 23 – Project – micro:PET Requirements and Planning

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * This is an open-ended project where Learners will use the skills, code and hardware that they have learnt about in previous lessons to build a Programmable Engaging Toy (PET) | * Understand what the project requires * Know what the success criteria mean * Begin to plan pet solution to meet the Success Criteria |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Interactive toys could be shared or demonstrated to the Learners to spark ideas * The teacher may have access to previous solutions from other classes which can be demonstrated and shared | **Expected Progress:**   * Learners discuss your ideas with other Learners   **Good Progress:**   * Learners record ideas and solutions in the planning table * Learners complete the design sheet   **Exceptional Progress:**   * Learners consider the program code and hardware that is required to create the PET |
| Links to KS3 Programme of Study | |
| * design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems * use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions * undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users | |
| Key Concepts | Key Words |
| * What the project requires * The success criteria * Planning and ideas * Design the micro:PET |  |
| Differentiation | Resources |
| The four programs increase in difficulty, which means that Learners of all abilities will be able to access the examples and use them in their micro:PET solution. | * Design Sheet * Lesson 23 ppt * Lesson 23 Activity Sheets 1 and 2 * Project overview * Access to previous lesson resources and hardware * Sample Python code * Design sheet * Scissors * Tinfoil * Access to [micro:bit Python Editor (microbit.org)](https://python.microbit.org/v/3) |
| Lesson Flow | |
| * Teacher to introduce the PET project * Allow Learners 5 to 10 minutes to discuss their ideas before they complete the planning table of their ideas * Discuss the fact that learners will be working in teams of 4, each performing a different role. Introduce the roles using the ppt. * Learners complete the planning table and write down their ideas of interaction and what features of the micro:bit they will use to do this * Encourage learners to be creative when thinking about functionality. Their initial ideas shouldn’t be constrained by available hardware. Once they have carried out the initial creative thinking students can then consider which ideas are practical for implementation. * It is important that Learners are given enough time to come up with ideas. Learners can always select these or more of the ideas provided at the beginning of the project brief * Two members of the team should complete the Design Sheet * The other two team members should work through activity sheet 2 which introduces some ideas and code for various interactions. * Teacher to circulate Learners and support with their ideas and solutions, try to refer to previous lesson activities and resources | |
| Making | |
| There are no making activities in this lesson. | |